DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-004717
Date Inspected: 17-Nov-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1330
OSM Departure Time: 600
Location: Shanghai, China

CWI Name: Mr. Li Yan Hua

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG Fabrication

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Heavy Bay #3

The QA Inspector performed initial random visual inspections of closed rib stiffener welds of deck panels DP387-001, DP468-001, DP304-001, DP441-001 and DP280-001. The QA Inspector observed ZPMC and ABF representatives had completed visual inspections of these welds and they had identified portions of the welds that need rework. The initial inspections have been documented on the bottom of the yellow inspection status tag that is attached to each of the deck panels. The QA Inspector completed the initial visual inspections of the welds on all five of these deck panels and documented the initial visual inspections on the bottom of the yellow inspection status tags that are attached to each of the deck panels.

OBG Bay #7

This QA Inspector performed random final visual and ultrasonic (UT) inspections of Floor Beam welds FB019-002-125, FB019-002-146, FB019-003-146 and FB019-003-120. The QA Inspector observed the welds appear to comply with AWS D1.5 UT requirements. For additional information on these inspections see the

TL6027 Ultrasonic Test Report.

OBG Bay 1

The QA Inspector monitored welding of closed rib Production Monitoring Test (PMT) representing deck plates DP339-002 and DP123-002 which were welded using one single base plate at approximately 0100 hours on November 18, 2008 using gantry #2. The QA Inspector observed six ZPMC welders using welding procedure specification WPS-B-T-2342-U1(Urib)-4 using the gas metal arc welding process for the root pass and submerged arc welding process for the cover pass of partial penetration groove welds on six PMT closed rib welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 528 mm per minute for the root passes and 512 mm per minute for the cover passes. As the welding commences, each of the welders is responsible for one of the welding heads. Welder Mr. Gao Xin Dong, stencil 59361 completed the root pass of weld #1 with a welding current of approximately 370 amps and 30. 4 volts and the cover pass welding current of approximately 680 amps and 25.0 volts. Welder Mr. Jiang Ting Guang, stencil 62265 completed the root pass of weld #2 with a welding current of approximately 370 amps and 30.3 volts and the cover pass welding current of approximately 685 amps and 24.8 volts. Welder Mr. Xu Guo Yin, stencil 59443 completed the root pass of weld #3 with a welding current of approximately 380 amps and 30.7 volts and the cover pass welding current of approximately 690 amps and 24.6 volts. Welder Mr. Chen Jie, stencil 59468 completed the root pass of weld #4 with a welding current of approximately 370 amps and 31.4 volts and the cover pass welding current of approximately 680 amps and 25.3 volts. Welder Ms. Xiang Huan Feng, stencil 59416 completed the root pass of weld #5 with a welding current of approximately 370 amps and 30.4 volts and the cover pass welding current of approximately 675 amps and 25.5 volts. Welder Mr. Xing Jie, stencil 59378 completed the root pass of weld #6 with a welding current of approximately 380 amps and 31.2 volts and the cover pass welding current of approximately 680 amps and 24.8 volts.

The QA Inspector performed random visual inspection of the root pass and cover passes and items observed appear to comply with project specifications. Following completion of the welding ZPMC QC CWI Inspector Mr. Li Yan Hua marked a 500 mm length of the welds as being the areas that are to be representative of this PMT test. The QA Inspector observed ZPMC NDE inspector performing ultrasonic of each of the six welds in the areas where Mr. Xi had marked for PMT testing. Following ZPMC's UT acceptance the QA Inspector marked a total of 15 locations where macroetch samples are to be obtained. ZPMC then cut and prepared macroetch samples. ZPMC QC CWI Inspector Mr. Li Yan Hua and ABF representative Mr. Wang Zhen Hua visually inspected these macroetch samples and documented their acceptance on the ZPMC "Production Monitoring Test Plate Inspection Report sheet dated 11-18-08. The QA Inspector visually inspected each of these macroetch samples and items observed by the QA Inspector appear to comply with project specifications.

Summary of Conversations:

See above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 13816942685, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

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Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Carreon,Albert	QA Reviewer